

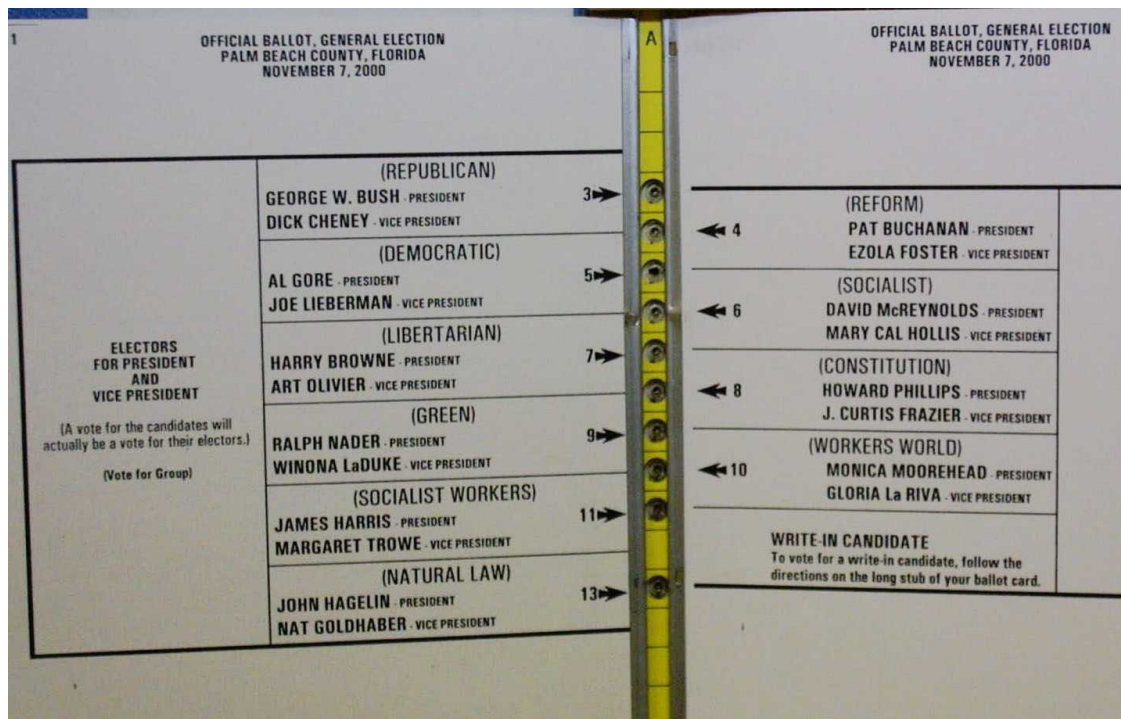
### 3B. The 2000 U.S. Presidential Election

February 6, 2020

## 1 The 2000 U.S. Presidential Election

The 2000 presidential election---between Republican George W. Bush, Democrat Al Gore, and other third-party candidates---was one of the closest in American history. The election came down to one state, Florida, which Bush won by just 537 votes (out of nearly 6,000,000 votes cast in the state).

After Election Day, Democrats claimed that the "butterfly ballot" that was used in Palm Beach County confused Gore voters into voting for Reform Party candidate Pat Buchanan. The ballot in question is shown below. To vote for Gore, who is listed second on the left, a voter actually had to punch the third hole (because the second hole is actually a vote for Buchanan, who is listed first on the right).



In this lab, you will evaluate this. The data file `florida.csv` contains county-level information about:

- the number of votes for Gore, Bush, Buchanan (and a few other candidates) in the 2000 presidential election

- the number of votes for Clinton (Democrat), Dole (Republican), and Perot (Reform) in the 1996 presidential election
- the number of votes for Buchanan in the 1996 primary
- the number of registered Reform voters and the total number of registered voters

Using this data, evaluate the claim that many voters in Palm Beach County voted for Buchanan when they intended to vote for Gore. (*Hint:* You should check whether Palm Beach County fits the general pattern of the other counties in Florida. Visualizations will likely be more helpful than summary statistics.) Then, craft a story that guides the reader through your discoveries. Your story should contain both figures and explanations.

```
[122]: # YOUR CODE HERE
%matplotlib inline
import matplotlib.pyplot as plt
import seaborn as sns
import pandas as pd
import numpy as np

df = pd.read_csv("florida.csv")
df
```

```
[122]:
```

	county	buchanan2000	gore2000	bush2000	nader2000	browne2000	total2000	\
0	ALACHUA	262	47,300	34,062	3,215	658	85,235	
1	BAKER	73	2,392	5,610	53	17	8,072	
2	BAY	248	18,850	38,637	828	171	58,486	
3	BRADFORD	65	3,072	5,413	84	28	8,597	
4	BREVARD	570	97,318	115,185	4,470	643	217,616	
..	...	...	...	...	...	...	...	
62	VOLUSIA	396	97,063	82,214	2,436	3,211	184,924	
63	WAKULLA	46	3,835	4,511	149	30	8,525	
64	WALTON	120	5,637	12,176	265	68	18,146	
65	WASHINGTON	88	2,796	4,983	93	32	7,904	
66	PALM BEACH	3,407	268,945	152,846	5,564	743	428,098	

	clinton96	dole96	perot96	buchanan96p	reform.reg	total.reg
0	40,144	25,303	8,072	2,151	91	120,867
1	2,273	3,684	667	73	4	12,352
2	17,020	28,290	5,922	1,816	55	92,749
3	3,356	4,038	819	155	3	13,547
4	80,416	87,980	25,249	7,927	148	283,680
..	...	...	...	...	...	...
62	78,905	63,067	17,319	4,441	1	6,752
63	3,054	2,931	1,091	133	176	260,572
64	5,341	7,706	2,342	546	7	13,382
65	2,992	3,522	1,287	190	22	28,144
66	230,621	133,762	30,739	8,788	9	14,358

[67 rows x 13 columns]

```
[123]: df.dtypes
```

```
[123]: county          object
buchanan2000         object
gore2000              object
bush2000              object
nader2000             object
browne2000            object
total2000             object
clinton96            object
dole96                object
perot96               object
buchanan96p           object
reform.reg            int64
total.reg             object
dtype: object
```

```
[124]: for col in df.columns:
        print(col)
```

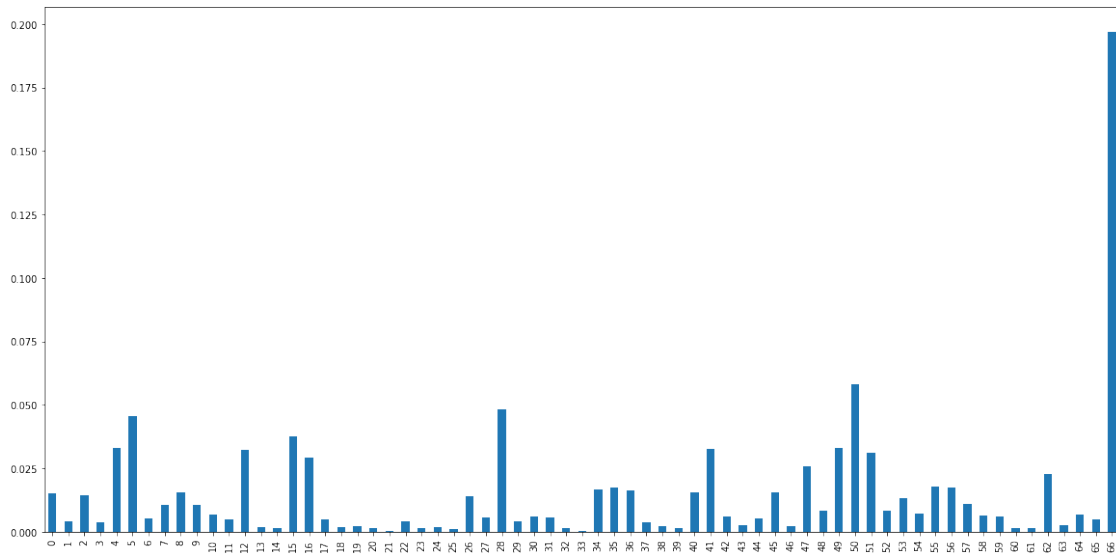
```
county
buchanan2000
gore2000
bush2000
nader2000
browne2000
total2000
clinton96
dole96
perot96
buchanan96p
reform.reg
total.reg
```

```
[125]: df['buchanan2000'] = df.buchanan2000.replace('[\,]', '', regex=True).astype(float)
        #pd.to_numeric(df.buchanan2000)

df['buchanan96p'] = df.buchanan96p.replace('[\,]', '', regex=True).astype(float)
```

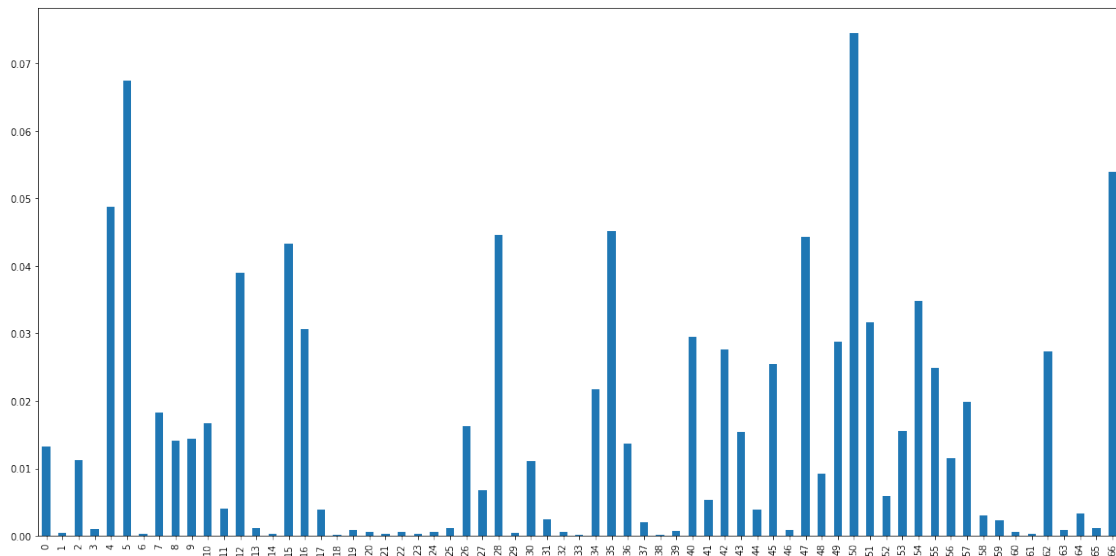
```
[129]: #Create subset of candidates vs locations
        #df1 = df.loc['ALACHUA': 'PALM BEACH', 'buchanan2000': 'browne2000']
        #df1
        (df['buchanan2000']/df['buchanan2000'].sum()).plot.bar(figsize=(20,10))
```

```
[129]: <matplotlib.axes._subplots.AxesSubplot at 0x7f9d7f6510b8>
```



```
[128]: (df['buchanan96p']/df['buchanan96p'].sum()).plot.bar(figsize=(20,10))
```

```
[128]: <matplotlib.axes._subplots.AxesSubplot at 0x7f9d7f968e48>
```



**YOUR EXPLANATION HERE** (You may need to add new cells as necessary.)

The proportion from the top table

## 2 Submission Instructions

Once you are finished, follow these steps:

1. Restart the kernel and re-run this notebook from beginning to end by going to **Kernel > Restart Kernel and Run All Cells**.
2. If this process stops halfway through, that means there was an error. Correct the error and repeat Step 1 until the notebook runs from beginning to end.
3. Double check that there is a number next to each code cell and that these numbers are in order.

Then, submit your lab as follows:

1. Go to **File > Export Notebook As > PDF**.
2. Double check that the entire notebook, from beginning to end, is in this PDF file. (If the notebook is cut off, try first exporting the notebook to HTML and printing to PDF.)
3. Upload the PDF and Notebook to iLearn.